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## **New birds for Guyana from Mts Roraima and Ayanganna**

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*Received 22 October 2001*

Mount Roraima, the legendary mountain at the juncture of Guyana, Venezuela and Brazil, has figured prominently in the history of ornithology in South America. Revered by indigenous people as the "mother of waters", this mountain was the destination of numerous exploratory expeditions, especially in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries. Most of the early expeditions to Mt Roraima were undertaken to explore the boundaries and/or biodiversity of Guyana, during the time that it was a British colony. Extensive collections were returned to European, Venezuelan and American museums by intrepid field scientists such as the Schomburgks, Whitely, McConnell, Quelch, Tate, Carter, the Phelps and others (Mayr & Phelps 1967). This material formed the basis for the description of numerous taxa of the endemic highland avifauna of the Pantepui region.

Ironically, many of these highland birds are not actually known to occur within the boundaries of Guyana (Phelps 1938, Snyder 1966, Braun *et al.* 2000), even though they have appeared in several previous accounts of its avifauna (e.g., Cabanis 1848, Chubb 1916, 1921). Because it is much easier to approach Mt Roraima through the savannas on the southwestern slopes than the extensive, continuous forest on the northeastern slopes, all biological expeditions prior to 1971 actually surveyed portions of the mountain that lie in Venezuelan territory. Phelps (1938) highlighted this fact and Snyder (1966) listed 33 bird species that had been collected on or near Mt Roraima, but were not known from Guyana. This gap in knowledge is significant, because several of these birds are restricted to the eastern tepuis and a large proportion of their global ranges may lie within Guyana.

From mid-March to mid-April 2001, we conducted an inventory of the avifauna of the north slope of Mt Roraima to document the presence of the Roraiman avifauna in Guyana. WSP accompanied an entomological expedition to Mt Ayanganna in September 1998, making incidental observations of highland birds. Here we document species encountered on these expeditions that are new to Guyana and/or Mt Roraima.

## Background information

The Pantepui region of eastern Guyana, southern Venezuela and northern Brazil is characterized by tall sandstone table mountains, or tepuis, that rise dramatically out of savanna- or forest-covered plains to heights of 1,500-3,000 m. Formed by millions of years of erosion of an ancient uplifted plateau, the tepuis are surrounded by steep, forested talus slopes, often culminating in dramatic pink or red cliffs of 500 m or more. The slopes and summits of the tepuis support a distinctive highland flora and fauna. Because of their isolation from each other and from other highland areas, the tepuis have a high degree of avian endemism at the species and subspecies level. The origins of this endemic avifauna have been the subject of several studies that have been influential in our understanding of processes that generate tropical biodiversity (Chapman 1931, Mayr & Phelps 1967, Cook 1974).

The Pantepui is divided biogeographically into eastern and western subregions by the Río Caroní in southeastern Bolívar, Venezuela (Mayr & Phelps 1967). Many of the eastern tepuis are arrayed along the borders of Guyana with Venezuela and Brazil. While the western and southern bases of these tepuis lie in savanna, the north and east slopes are covered in dense continuous forest due to higher rainfall caused by prevailing, moisture-laden, northeasterly winds. In Guyana, the eastern tepuis are known as the Pacaraima Mountains. At 2,810 m, Mt Roraima is the tallest of the eastern tepuis. Ayanganna lies 90 km east of Mt Roraima, fully within Guyanese territory and surrounded by forest. It is the easternmost tepui over 2,000m.

Although the eastern subregion occupies a much smaller geographic area than the western subregion, avian diversity is greater with several endemic species in the eastern tepuis. This may be due to the higher average elevation of the eastern tepuis and their proximity to one another (Mayr & Phelps 1967, Cook 1974, Willard *et al.* 1991). From a plumage standpoint, the eastern tepui endemics include the most distinctive and highly differentiated tepui birds, such as Red-banded Fruiteater *Pipreola whitelyi*, Rose-collared Piha *Lipaugus streptophorus*, Ruddy Tody-Flycatcher *Todirostrum russatum* and Olive-backed Tanager *Mitrospingus oleagineus*. Although the area in which they occur is largely pristine, all of these birds are of conservation concern due to their small global ranges (Stattersfield *et al.* 1998). Expansion of mining and logging in this region may soon threaten their habitat.

## Study sites and methods

We visited Mt Roraima in March and April 2001, near the end of the local dry season. From Kamarang, we ascended the Mazaruni, Kako and Waruma rivers by

boat to the highest navigable point (5°29'N, 60°47'W). We then reopened a 26 km trail cut by previous expeditions to the foot of Roraima (Warren 1973). We camped at 800 m (5°17'N, 60°45'W) from 18-27 March and at 1,300 m (5°16'N, 60°44'W) from 28 March-12 April. The 800 m camp was in tall, humid, closed canopy forest that was transitional between the lowland and montane forests of the area. The 1,300 m camp was in epiphyte-laden cloud forest of lower stature and more open canopy. From this camp, we could reach a ridge top with stunted forest at 1,500 m, but a sheer cliff blocked our upward progress beyond that.

At each camp we opened additional trails and surveyed the avifauna with tape recorders, mist nets, and shotguns. We logged c. 60 observer-days at the 800 m camp and c. 90 at 1,300 m. We set c. 30 mist nets at each camp, logging c. 2,200 mist net hrs at 800 m and 3,700 hrs at 1,300 m. We made notes on the habitat, behaviour, breeding condition and feeding ecology of most species encountered. A representative series of specimens for many species, including the first anatomical and genetic samples for several species, are deposited at the US National Museum of Natural History (USNM), University of Kansas Natural History Museum (KUNHM), and the University of Guyana. Tape recordings are deposited at the Macaulay Library of Natural Sounds (MLNS) of the Cornell Laboratory of Ornithology. All work was conducted under research permits issued by the Environmental Protection Agency of Guyana.

WSP accompanied an entomological expedition to Mt Ayanganna (5°24'N, 60°00'W) in September 1998 and photographed mist-netted birds (photos on file at USNM).

## Results and discussion

Brief accounts are given below for twenty-six species for which significant new distributional information was gathered on these expeditions. Twenty-four species are new to the Guyana list since the compilation of Snyder (1966). Eight of these (*Otus roraimae*, *Aeronautes montivagus*, *Campylopterus hyperythrus*, *Xenops tenuirostris*, *Todirostrum russatum*, *Knipolegus poecilurus*, *Tangara xanthogastra* and *Atlapetes personatus*) appeared in the list of Braun *et al.* (2000); details for their inclusion are provided here. Twenty-two of the new species for Guyana are documented by physical evidence (specimen, photograph and/or tape recording).

We encountered four species (*Aegolius harrisi*, *Cypseloides phelpsi*, *Aeronautes montivagus*, and *Colibri delphinae*) that were not listed for the highland avifauna of Mt Roraima in the compilation of Willard *et al.* (1991). Omission of a fifth species, *Tangara punctata*, appears to be an oversight, as the species was mentioned by both Chapman (1931) and Chubb (1916). Mt Roraima is the best studied of all tepuis ornithologically and these additions bring its list to 89 species, or 86% of the total Pantepui highland avifauna treated by Willard *et al.* (1991).

Taxa marked with asterisks are new to Guyana since Snyder (1966). Letters in parentheses following the scientific names denote the following: E- endemic species

of the Pantepui; EE- endemic species restricted to the eastern tepuis; S- specimen; T- tape recording.

**\*TEPUI SCREECH-OWL** *Otus roraimae* (E, T)

One or more were heard daily in our 800 m camp on Roraima at dawn and dusk. The species was also heard irregularly at 1,300 m. It was previously known in Guyana from a tape recording made at the Waruma River landing in 1994 (MBR; MLNS 85789) and a specimen (KUNHM 89695) taken in the Acari Mts in 1998.

**\*BUFF-FRONTED OWL** *Aegolius harrisi* (T)

A single bird sang briefly at 0330 h and 0515 h on 29 March above our tents at the 1,300 m camp on Mt Roraima. Either the same or another individual weakly responded to pre-recorded tape on the early evening of 4 April near the same camp. What was probably a different individual was tape-recorded by CMM on 8 April at 1,450 m. Although there are only two previous records for Pantepui (Cerro Neblina, Willard *et al.* 1991; Auyán-tepui, Barrowclough *et al.* 1997), this largely overlooked species is now known from a number of localities in South America (Konig *et al.* 1999).

**TEPUI SWIFT** *Cypseloides phelpsi* (E, S)

During clear weather, this swift was seen daily in flocks of 10-300 individuals on Mt Roraima. We recorded it from 500-1,500 m, usually flying high overhead at elevations up to *c.* 2,300 m. Occasional groups came much lower over rivers, forest clearings and savannas to feed. On 18 April, *c.* 30 individuals were seen at close range (< 100 m) over a small savanna at 5°31'N, 60°44'W. At least four of these birds appeared entirely dark in plumage (MBR, CMM). Although Black Swift *C. niger* and White-chinned Swift *C. cryptus* are known in Guyana (Snyder 1966, Stiles & Negret 1994), we suspect that these all dark birds were juvenile *C. phelpsi*, because they appeared indistinguishable from adjacent adults in size and shape, and immature *C. phelpsi* are reported to lack the chestnut collar (Chantler & Driessens 2000). Three of four adults we collected were in breeding condition, which supports Collins's (1972) supposition that the species breeds at the onset of the rainy season. The only previous specimens from Guyana were collected by Whitely in the Merume Mts in the 1800s (Collins 1972).

**\*WHITE-TIPPED SWIFT** *Aeronautes montivagus*

This species was observed on two occasions, in small groups of 3-4 birds, at eye level at *c.* 1,500 m on Mt Roraima (MBR, BJO). There were prior Guyana sight records from the Kanuku Mts (Parker *et al.* 1993) and Kaieteur Falls (D. W. Finch, MBR, MJB and CMM, pers. obs.).

**\*RUFIOUS-BREASTED SABREWING** *Campylopterus hyperythrus* (EE, S, T)

This eastern tepui endemic was mist-netted and photographed on Mt Ayanganna by WSP in September 1998. It was fairly common on Mt Roraima from c. 1,000 m upwards, becoming common to abundant at 1,300 m and above. The birds used all levels of the forest from undergrowth to canopy, and were especially abundant at flowering trees, with up to 20 individuals noted at one tree. Undoubtedly, the "green and orange humming-bird" filmed by the 1971 expedition to Mt Roraima (Warren 1973, p.63) was also this species.

**\*SPARKLING VIOLETEAR** *Colibri coruscans*

Two individuals seen at a flowering tree on 9 April by MBR and BJO in broken ridgetop forest at 1,500 m on Roraima constitute our only record. This species is likely more common in the stunted vegetation along the talus slopes at the base of the rock cliffs.

**BROWN VIOLETEAR** *Colibri delphinae* (S, T)

This species was commonly seen visiting midlevel and canopy flowers and making aerial sallies for insects above 1,000 m on Roraima. Its omission from the Roraima list of Willard *et al.* (1991) appears to be an oversight, as it was mentioned for Roraima by both Chapman (1931) and Chubb (1916). However, the fact that no specimens were taken on Roraima and only three on Mt Duida by major expeditions in 1927 and 1928 (Chapman 1931) suggests that this species may be more common on the humid northern and eastern slopes of Roraima, where we encountered it in relatively large numbers.

**\*RED-RUMPED WOODPECKER** *Veniliornis kirkii* (S, T)

The species was uncommon from 1,200 m upwards on Roraima, with 1-2 individuals recorded almost daily. Recently fledged young were seen with adults on 30 March (MBR). The species was primarily encountered in the forest canopy and subcanopy, occasionally joining mixed-species flocks.

**\*WHITE-THROATED FOLIAGE-GLEANER** *Automolus roraimae* (E, S, T)

This endemic was scarce at 800 m but became uncommon above 1,200 m on Mt Roraima. It was found mostly in relatively dense undergrowth but was seen occasionally in the moss-laden subcanopy with mixed-species flocks. Although the species vocalized infrequently, gonads, enlarged and with convoluted oviducts, indicate that breeding had occurred just prior to our visit.

**\*SLENDER-BILLED XENOPS** *Xenops tenuirostris* (S)

A specimen (USNM 626868) collected from a canopy mixed flock at 1100 m on Mt Roraima on 10 April by MJB was our only record. The bird appeared smaller than Plain Xenops *X. minutus* and moved faster, more like a nuthatch. It responded strongly to squeaking and an imitation of a pygmy owl *Glaucidium* sp. This is the first

specimen record for Guyana, but there have been two prior sight records (Parker *et al.* 1993, Anonymous 1999).

**\*STREAK-BACKED ANTSHRIKE** *Thamnophilus insignis* (E, S, T)

This species was uncommon from 1,100 m upward on Mt Roraima. It was usually encountered in pairs in the understory, ascending occasionally to the subcanopy. The species was heard vocalizing only occasionally during our stay.

**\*SCALED ANTPITTA** *Grallaria guatimalensis* (S, T)

Birds were heard infrequently at our 800 m camp on Mt Roraima but above 1,200 m, this species was quite common and sang persistently. As many as 8-10 could be heard per day in the area of our 1,300 m camp, singing from perches ranging from near ground level to >10 m high. We recorded three distinct vocalizations. The most frequent was a long series of low hooting notes with three longer, more emphatic notes in the middle. This song has been recorded throughout much of the range of the species without marked variation (e.g., Krabbe & Coopmans 2000). An uncommon variant of this song was higher-pitched and somewhat *Otus*-like. The third vocalization, given frequently at dawn, was a shorter, simpler, also *Otus*-like series. A very similar alternate vocalization appears to be given by the Moustached Antpitta *G. alleni* (L. Renjifo and MJB, unpublished data) and may perhaps be expected from other members of the *guatimalensis* complex.

**\*TEPUI ANTPITTA** *Myrmothera simplex* (E, S, T)

This endemic was recorded as low as 700 m but was most common above 1,200 m on Mt Roraima. The species sang frequently in the morning and evening; both its song and low, chuckling alarm calls were similar to those of its lowland congener, the Thrush-like Antpitta *M. campanisona*. Birds stayed within 1-2 m of the ground and responded vigorously to playback often by running rather than hopping in short spurts of 2-3 m. A nest with eggs, discovered at 700 m on 24 March by BRB and MBR, will be described elsewhere.

**\*SLATE-CROWNED ANTPITTA** *Grallaricula nana* (S, T)

Although seen infrequently, this species was captured almost daily in mist nets at 1,300 m on Mt Roraima. It was never heard singing but individuals flushed along the trail gave single-noted calls.

**\*CHAPMAN'S TYRANNULET** *Phylloscartes chapmani* (E, S, T)

This little-known flycatcher was common in the forest mid-story and subcanopy from 900 to 1,500 m on Mt Roraima. It was mostly seen in pairs or family groups, often with mixed flocks. On several occasions, birds were seen quickly raising one wing to a fully open, vertical position where it was held for perhaps a second before closing. This distinctive behaviour occurs in several other tyrannid genera.

**\*BLACK-FRONTED TYRANNULET** *Phylloscartes nigrifrons* (E, S, T)

This endemic was considerably less common on Mt Roraima than its congener, *P. chapmani*. Although the first specimen was taken from a midstory mixed-species flock at 800 m, we found it mostly above 1,000 m, where it was uncommon inhabitant of the canopy and subcanopy.

**\*RUDDY TODY-FLYCATCHER** *Todirostrum russatum* (EE, S, T)

This eastern tepui endemic was mist-netted and photographed by WSP on Mt Ayanganna in September 1998. It was fairly common in the forest undergrowth on Mt Roraima from 1,200 m upward. The species was typically found in pairs, often giving a short series of ticking notes.

**\*RUFIOUS-TAILED TYRANT** *Knipolegus poecilurus* (S)

This species was uncommon around tree falls and in stunted ridge crest forest from 1,300 m upward on Mt Roraima. The only previous records from Guyana are from the Acari Mts in the extreme south in 1998 (USNM and KUNHM, unpublished data).

**\*TEPUI WREN** *Troglodytes rufulus* (E, S, T)

With the single exception of a pair at c. 1,400 m, all other individuals encountered were in stunted vegetation along a knife-like ridge at 1,500 m on Mt Roraima. Presumably, it is more common in the more extensive, stunted vegetation along the talus slopes at the base of the rock cliff. Pairs were encountered in dense undergrowth, creeping through tangles, on the ground, or over rocks and logs. The song, which is simple, high-pitched, and thrush-like, seems atypical for a *Troglodytes*.

**\*YELLOW-LEGGED THRUSH** *Platycichla flavipes* (T)

We had only one definite record of this forest thrush on Mt Roraima. A bird was tape-recorded at the same site at 1,000 m on 5, 6 and 10 April (CMM, MJB). The singing bird was seen in the subcanopy by BJO on 6 April and diagnostic field marks were noted (all dark plumage and irides, yellow bill, feet and eyering). None were mist-netted, although we were within the elevational range given for the bird in the tepuis by Meyer de Schauensee & Phelps (1978).

**\*GREATER FLOWER-PIERCER** *Diglossa major* (EE, S, T)

This gigantic flower-piercer was fairly common in the cloud forest canopy and subcanopy from 1,200 m upward on Roraima. Presumed pairs and single birds were observed in mixed-species flocks and visiting flowering and fruiting trees. On several occasions individuals were seen making aerial sallies for insects above the canopy flowering trees and once in a mid-level forest light gap. The spectacular size of this *Diglossa*, 1.5 to 3 times as large as any of its congeners (Isler & Isler 1987), and the fact that it has a small and isolated range in the eastern tepuis, suggests that it is an example of insular gigantism. The Tepui Wren, and tepui subspecies of Great

Antshrike *Taraba major duidae*, Rufous-collared Sparrow *Zonotrichia capensis macconnelli* and Wedge-tailed Grass-Finch *Emberizoides herbicola duidae* are other Pantepui endemics that may exhibit the same phenomenon.

**\*WHITE-WINGED TANAGER** *Piranga leucoptera* (S)

Only two pairs of this tanager were encountered, both at 1,300 m in the forest canopy on Mt Roraima. One pair was visiting a flowering tree. A male and a female specimen (USNM 626850 and 626849) document these first records for Guyana.

**\*SPECKLED TANAGER** *Tangara guttata* (S)

One specimen (USNM 626866), mist-netted in stunted ridgetop forest at 1,500 m on Mt Roraima on 9 April, was our only record and the first for Guyana. This is often a common species in the foothills of the Andes and Central America and it may be more common in forest edge habitats (Meyer de Schauensee & Phelps 1978), which were scarce on our route. However, there is some indication that it varies widely in abundance in the Pantepui region. At collecting stations where it was noted by Chapman (1931), 1, 1 and 38 individuals were taken at three stations on Mt Roraima and 1 was taken on Mt Duida. Only one specimen and one sighting were recorded on two expeditions to Cerro de la Neblina (Willard *et al.* 1991). Yet it is reported to be common on Cerro Tamacuarí (Barrowclough *et al.* 1995) and Cerro Guaiquinima (J. Perez-Eman, pers. comm.).

**\*YELLOW-BELLIED TANAGER** *Tangara xanthogastra* (S)

This species was fairly common in pairs and small groups in the forest canopy on Mt Roraima from 1,100 m upwards. The only previous Guyana record was a single bird collected from a pair seen in 1996 in the Iwokrama Mts (Anonymous 1999).

**\*TEPUI BRUSH-FINCH** *Atlapetes personatus* (E, S, T)

This highly polymorphic finch was mist-netted and photographed on Mt Ayanganna by WSP in September 1998. It was uncommon in dense cloud forest undergrowth from 1,200 m upwards on Mt Roraima. We usually found them in pairs that infrequently sang duets.

**\*SLATY FINCH** *Haplospiza rustica*

A subadult male of this rare finch was mist-netted and photographed on Mt Ayanganna by WSP in September 1998. Single specimens from Chimanta-tepui and Neblina are the only previously published Pantepui records (Willard *et al.* 1991).

With the data presented herein, only 11 of the 33 Roraiman species listed by Snyder (1966) remain unrecorded or inadequately documented from Guyana (Braun *et al.* 2000). These are Band-tailed Pigeon *Columba fasciata*, Band-winged Nightjar *Caprimulgus longirostris*, Roraiman Nightjar *Caprimulgus whitelyi*, Sharp-tailed Streamcreeper *Lochmias nematura*, White-throated Tyrannulet *Mecocerculus*



*leucophrys*, Green-backed Becard *Pachyramphus viridis*, Tawny-headed Swallow *Alopochelidon fucata*, Lawrence's Thrush *Turdus lawrenci*, Blue-hooded Euphonia *Euphonia musica*, Paramo Seedeater *Catemia homochroa* and Slate-colored Seedeater *Sporophila schistacea*. Two other species not listed by Snyder belong in the same category: Great Elaenia *Elaenia dayi* and Tepui Goldenthrroat *Polytmus milleri* (Meyer de Schauensee & Phelps 1978, Willard *et al.* 1991). With the possible exception of *Turdus lawrenci*, a lowland species, it seems likely that all these birds will ultimately be found in Guyana as the higher elevations and specialized microhabitats of the Pacaraima Mts are fully explored.

### Acknowledgements

We are grateful for the advice, assistance and support of Vicki Funk, Carol Kelloff, Dyantie Naraine, Romeo Williams, Claudius Perry, and the communities of Kamarang and Kako village, especially Kelly and Derek Kramer, Wallen Williams, Ferriman Austin and Wesley Roland. Logistical and financial support was provided by the Biological Diversity of the Guianas program (USNM) and the Center for the Study of Biodiversity (UG). The Guyana Environmental Protection Agency kindly granted fieldwork and export permits. Major funding for the Roraima expedition was provided by a grant from the National Geographic Society to Robbins and Braun. Robbins' involvement was also supported through a grant from the Blake Fund of the Nuttall Ornithological Club. Partial funding of Barber's participation was through the generosity of the Rudkin Award for Undergraduate Research at the University of Kansas and the Burroughs Audubon Society. C. Feare, C. Sharpe, D. Ascanio and J. Perez-Eman provided helpful comments on the manuscript. This is number 70 in the Smithsonian's Biological Diversity of the Guianas Program publication series.

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## Notes on some genera and subgenera of rails (Rallidae)

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Received 31 October 2001

For some years I have been compiling a database of the "unabbreviated" first occurrence of every generic, subgeneric, specific and subspecific name applied to birds since Linnaeus (1758), but also including pre-Linnean names, and early vernacular names where these served as the basis for later scientific names. I mention "unabbreviated" because a major problem in many nineteenth-century works is the use of abbreviations for both the names of authors and the titles of both monographs and periodicals. For example, "Bp. *Consp. Vol. Zygod.* p. 7 (1854)" or "Forst. *Descr. Anim.* p. 151. (1844)". The former is: Bonaparte, 1854, "Conspectus Volucrum Zygodactylorum" in *Ateneo Italiano*, 2, p. 7; and the latter: J. R. Forster, 1844,